

**ABSTRACT**

The present invention relates to modified G-protein coupled receptors (GPCRs). The modified GPCRs of the present invention include GPCRs  
5 that have been modified to have altered DRY motifs such that the modified GPCRs are constitutively desensitized. As such, the modified GPCRs of the present invention preferably localize to endocytic vesicles or endosomes in an agonist-independent manner. The invention also relates to methods of screening compounds and sample solutions for GPCR activity using the  
10 modified GPCRs.